

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

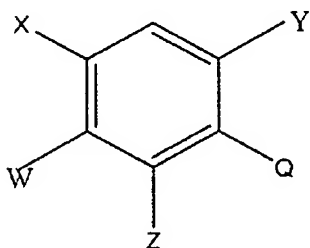
RECEIVED  
CENTRAL FAX CENTER  
JUL 07 2006

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

#### LISTING OF CLAIMS:

1. (finally amended - four times): A compound represented by the formula I or its salts



I

wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)<sub>2</sub>, amide, [thioamide]thioamide, cyano, alkylcarbonyl, alkoxycarbonyl, [alkylsulfonamide]alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxycarbonylalkoxy, benzyloxy, amyloxy, or heteroaryloxy;

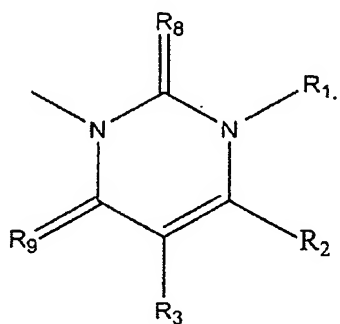
Y is hydrogen, halogen, or nitro;

W is hydrogen, OR, SR, NHR, N(R)<sub>2</sub>, CH<sub>2</sub>R, CH(R)<sub>2</sub>, C(R)<sub>3</sub>, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, aryloxycarbonyl, or heteroaryloxycarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups

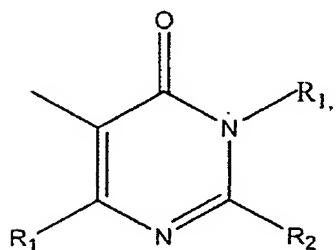
AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, [alkoxybarbonyl]alkoxycarbonyl, haloalkoxy, haloalkoxycarbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:

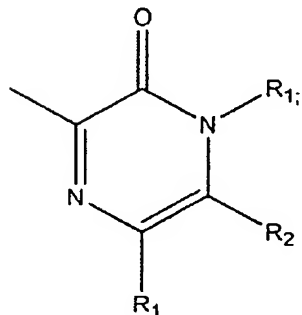


Q1



Q12

or



Q13

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

wherein  $R_1$  is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;

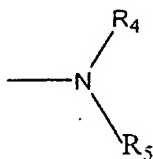
$R_2$  is alkyl or haloalkyl;

$R_1$  and  $R_2$  could combine to form a five- or six-membered heterocyclic ring;

$R_3$  is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

$R_8$  and  $R_9$  are independently oxygen, or sulfur;

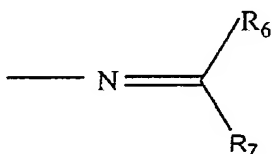
$Z$  is amino, hydroxyl, thiol, formyl, carboxyl, cyano, alkylcarbonyl, arylcarbonyl, azido, or one of the following:



wherein  $R_4$  is alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl,] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylamino carbonyl, alkoxycarbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, [alkylcarbonyl] alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxycarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy, carbonyl, aryl, or heterocycloalkyl; and  $R_5$  is hydrogen or any one of the groups represented by  $R_4$ ; or  $R_4$  and  $R_5$  could combine to form a 4-8 membered heterocyclic ring;



wherein  $R_6$  represents alkyl, haloalkyl, dialkylamino, unsubstituted or substituted aryl and heteroaryl; and  $R_7$  represents hydrogen, halogen or any of the groups represented by  $R_6$ ;

$\text{---OR}_4$ ,

$\text{---SR}_4$ ,

$\text{---CH}_2\text{R}_{10}$ ,

$\text{---CH(R}_{10})_2$ ,

$\text{---C(R}_{10})_3$ , or

$\text{---CH=CHR}_{10}$

wherein  $R_{10}$  is carboxyl, alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, [alkylthiocarbonyl] alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthiocarbonyl,] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxycarbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxycarbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxycarbonyl, cycloalkyl, aryl, or heterocycloalkyl;

provided that [(1)] Z is not alkyl, alkoxy, haloalkyl, haloalkoxy, alkylthio, haloalkylthio, alkenyl, haloalkenyl, amino, monoalkylamino, dialkylamino, alkoxyalkoxy, hydroxyl, alkynyloxy or cyano, when Q is Q<sub>1</sub> and R<sub>2</sub> is haloalkyl.

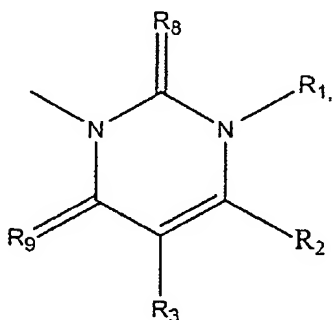
5. (finally amended - three times): The compound according to claim 1 wherein X is a halogen;

Y is fluorine;

W is OR; R is alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with halogen or cyano;

Q is

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936



Q1

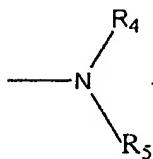
wherein R<sub>1</sub> is alkyl, amino, or haloalkyl;

R<sub>2</sub> is haloalkyl;

R<sub>3</sub> is hydrogen;

R<sub>8</sub> and R<sub>9</sub> are independently oxygen, or sulfur;

Z is represented by the following:



wherein R<sub>4</sub> is alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxy carbonyl, aryloxy carbonyl, [arylthio-carbonyl,] aryl-thiocarbonyl, heteroaryloxy carbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylamino carbonyl, alkoxy carbonyl carbonyl, or arylcarbonyl carbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

arylaminoacarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxycarbonyl, aryl, or [heterocycloalkyl]heterocycloalkyl; and  $R_5$  is hydrogen;

or  $-CH_2R_{10}$ ,

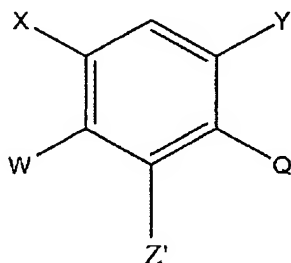
wherein  $R_{10}$  is carboxyl, alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxycarbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein [teh]the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxycarbonyl, cycloalkyl, aryl, or heterocycloalkyl.

6. (finally amended - four times): A compound selected from the group consisting of 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)pyrimidinedione; [and 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-amino-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione] 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-amino-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione;

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

3-(2-amino-4-chloro-6-fluoro-3-methylphenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione; and 3-(2-amino-4-chloro-3-difluoromethoxy-6-fluorophenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione.

8. (finally amended - two times): A process for preparing a compound represented by the formula I-1 or its salts:



I-1

wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)<sub>2</sub>, [amide]amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonylalkoxy, [benzloxy]benzyloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

W is hydrogen, OR, SR, NHR, N(R)<sub>2</sub>, CH<sub>2</sub>R, CH(R)<sub>2</sub>, C(R)<sub>3</sub>, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxy carbonyl,

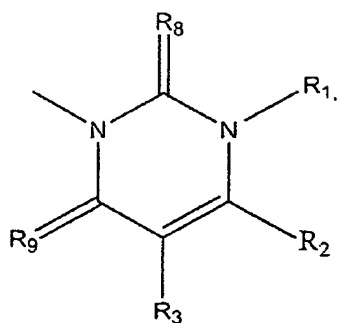


AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

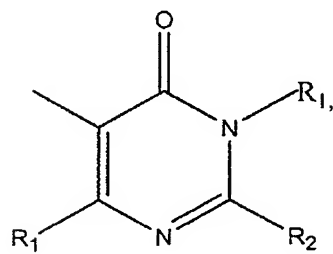
where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxy carbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

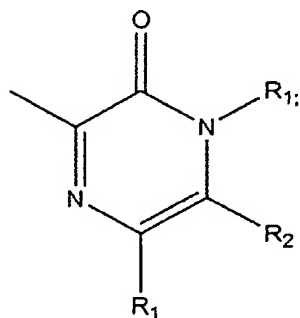


Q1



Q12

or



Q13

wherein R<sub>1</sub> is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;

R<sub>2</sub> is alkyl or haloalkyl;

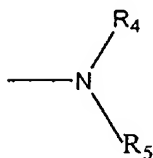
R<sub>1</sub> and R<sub>2</sub> could combine to form a five- or six-membered heterocyclic ring;

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

R<sub>3</sub> is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R<sub>8</sub> and R<sub>9</sub> are independently oxygen, or sulfur;

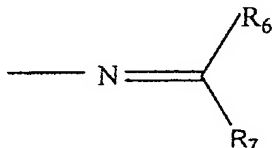
Z' is one of the following:



wherein R<sub>4</sub> is alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl,] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxycarbonylcarbonyl, or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxycarbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy,

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

alkoxycarbonyl, aryl, or heterocycloalkyl; and  $R_5$  is hydrogen or any one of the groups represented by  $R_4$ ; or  $R_4$  and  $R_5$  could combine to form a 4-8 membered heterocyclic ring;



wherein  $R_6$  represents alkyl, [haloalkyl]haloalkyl, dialkylamino, unsubstituted or substituted aryl and heteroaryl; and  $R_7$  represents hydrogen, halogen or any of the groups represented by  $R_6$ ;

$-\text{CH}_2\text{R}_{10}$ ,

$-\text{CH}(\text{R}_{10})_2$ ,

$-\text{C}(\text{R}_{10})_3$ , or

$-\text{CH}=\text{CHR}_{10}$

wherein  $\text{R}_{10}$  is carboxyl, alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, [25] alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl] arylthiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl,

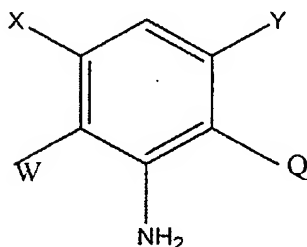
AMENDMENT UNDER 37 C.F.R. §1.312

U.S. Application No. 10/797,936

alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxycarbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxycarbonyl, cycloalkyl, aryl, or heterocycloalkyl;

provided that [(1)] Z' is not alkyl, haloalkyl, alkenyl, haloalkenyl, monoalkylamino, or dialkylamino, when Q is Q1 and R<sub>2</sub> is haloalkyl,

which comprises of reacting a compound represented by the formula II:



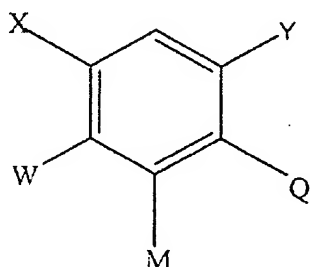
II

with a compound selected from the group consisting of an alkyl halide, alkyl acid halide, aryl acid halide, alkyl acid anhydride, aryl acid anhydride, alkylhaloformate, alkyl isocyanate, aryl isocyanate, alkyl dihalide, aliphatic aldehyde, aliphatic ketone, aromatic aldehyde, and aromatic ketone.

9. (finally amended - once amended): A compound represented by the formula III:

AMENDMENT UNDER 37 C.F.R. §1.312

U.S. Application No. 10/797,936



III

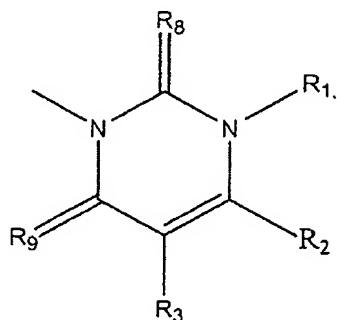
wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)<sub>2</sub>, amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonyl alkoxy, benzyloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

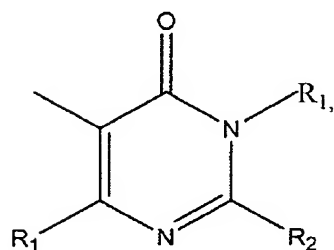
W is hydrogen, OR, SR, NHR, N(R)<sub>2</sub>, CH<sub>2</sub>R, CH(R)<sub>2</sub>, C(R)<sub>3</sub>, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxy carbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxy carbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:

AMENDMENT UNDER 37 C.F.R. §1.312  
U.S. Application No. 10/797,936

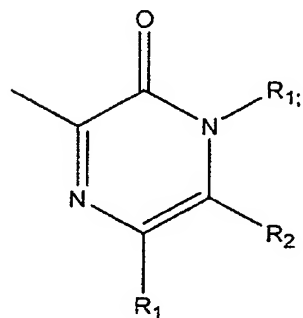


Q1



Q12

or



Q13

wherein R<sub>1</sub> is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;

R<sub>2</sub> is alkyl or haloalkyl;

R<sub>1</sub> and R<sub>2</sub> could combine to form a five- or six-membered heterocyclic ring;

AMENDMENT UNDER 37 C.F.R. §1.312

U.S. Application No. 10/797,936

R<sub>3</sub> is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R<sub>8</sub> and R<sub>9</sub> are independently oxygen or sulfur;

M is nitro,

provided that 1-methyl-6-trifluoromethyl-3-(4-bromo-2-fluoro-5-hydroxy-6-nitrophenyl)-2,4(1H,3H)-pyrimidinedione and 1-methyl-6-trifluoromethyl-3-(4-chloro-2-fluoro-5-hydroxy-6-nitrophenyl)-2,4(1H,3H)-pyrimidinedione are excluded.